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The Thirty-Eighth Annual Report

OF THE

UNIVERSITY OF MARYLAND

Agricultural Experiment Station



College Park, Prince George's County, Maryland

1924-1925

PUBLISHED BY THE STATION

The University of Maryland Agricultural Experiment Station

The Board of Trustees of the University of Maryland

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Experiment Station Staff

HARRY J. PATTERSON	Director and Chemistry
THOMAS H. WHITE	Vegetable and Floriculture
J. B. S. NORTON	Botany and Plant Pathology
CHARLES O. APPELMAN	Plant Physiology
ROY H. WAITE	Poultry
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A. G. MCCALL	Soils
J. E. METZGER	Agronomy
E. M. PICKENS	Animal Pathologist
E. C. AUCHTER	Horticulturist
ALBERT WHITE	Supt. Ridgeley Farm
F. S. HOLMES	Seed Inspector
DE VOE MEADE	Animal Husbandry
J. A. GAMBLE	Dairy Husbandry
FRED. W. GEISEL	Vegetable Breeding
H. B. McDONNELL	Pathological Chemist
C. C. HAMILTON	Associate Entomologist
W. B. KEMP	Associate Agronomist
E. S. JOHNSTON	Associate, Plant Physiology
A. M. SMITH	Associate, Soils
R. A. JEILE	Associate, Plant Pathologist
F. H. LEUSCHNER	Associate, Poultryman
JOS. M. SNYDER	Assistant, Soils
H. B. WINANT	Assistant, Soils
L. J. POELMA	Assistant, Pathologist
R. LEE SELLMAN	Assistant, Agronomist
W. N. EZEKIEL	Assistant, Plant Pathology
H. BIERMAN	Assistant, Dairy Husbandry
MRS. E. F. STODDARD	Clerk

The Station is located on the B. & O. R. R. and City and Suburban Electric Car Line, eight miles north of Washington, D. C.
Bell Telephone—Berwyn Exchange.

Visitors will be welcomed at all times, and will be given every opportunity to inspect the work of the Station in all its departments.

The Bulletins and Reports of the Station will be mailed regularly, free of charge, to all residents of the State who request it.

ADDRESS:
AGRICULTURAL EXPERIMENT STATION,
COLLEGE PARK, Md.

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UNIVERSITY OF MARYLAND

AGRICULTURAL EXPERIMENT STATION

Volume 38

1924-1925

THE THIRTY-EIGHTH ANNUAL REPORT OF THE MARYLAND AGRICULTURAL EXPERIMENT STATION

For the Fiscal Year Ending June 30, 1925

By H. J. PATTERSON, Director

*To the Governor of Maryland and the President and the Board of
Regents of the University of Maryland:*

Gentlemen:

In compliance with the requirements of the act of Congress passed in 1887 providing for the establishment and support of Agricultural Experiment Stations, I submit herewith a report upon the investigational work which is being pursued and a financial statement as to the expenditure of the Federal and State appropriations for the fiscal year ending June 30, 1925.

The work of the Station has made about the usual progress during the year. Some experiments have been completed and new projects have been inaugurated as funds and facilities would permit.

The passage by the U. S. Congress on February 24, 1925 of the act known as the "Purnell Act" made an additional appropriation to each State for agricultural research. This act is in a measure supplementary to the Hatch and Adams acts and provides especially for research in home economics and agricultural economics and sociology. The funds provided for by the Purnell act became available July 1st, 1926. Plans for its utilization were well under way before that date. The appropriation under this act is \$20,000 for the first year and is to be increased \$10,000 per year until it reach

\$60,000. This provision makes it possible to plan work and take care of its gradual expansion and growth.

The results secured during the year have been given to the public from time to time through bulletins, addresses, at meetings, papers published in Scientific journals, Agricultural journals and newspapers. The following is a list of publications issued during the year:

BULLETINS ISSUED		Page
No. 268	Green Manuring Crops for Soil Improvement By A. G. McCall.....	1-12
No. 269	The Biology and Control of the Chrysanthemum Midge. By Clyde C. Hamilton.....	13-51
No. 270	Growth of Potato Plants in Sand Culture with Nutrient Solution. By Earl S. Johnston.....	52-86
No. 271	Fruit Rotting Sclerotinias. By Walter N. Ezekiel.....	87-142
No. 272	The Boxwood Leaf Miner. By Clyde C. Hamilton.....	143-170
No. 273	The Maryland Egg-Laying Competition and Performance Tests. By R. H. Waite and F. H. Leuschner.....	171-186
Thirty-seventh Annual Report 1923-24 by H. J. Patterson.....		20

The following is a partial list of Scientific papers contributed by members of the Staff to Journals and meetings:

1. The Physiological shrinkage of Potatoes in Storage.
By C. O. Appleman and W. D. Kimbrough.
2. Relation of Respiration to Storage and Transportation of Potatoes.
By W. D. Kimbrough.
3. Determination of Protopectin in Plant Tissues.
By C. M. Conrad.
4. The Time for Picking and Canning Corn.
By C. O. Appleman.
5. The Oriental Peach Moth.
By E. N. Cory.
6. The Laspeyresia Molesta Busck as a Quince Pest.
By E. N. Cory.
7. The Potato Tuber Moth.
By E. N. Cory.

8. The Control of Peach Tree Borer.
By E. N. Cory.
9. Colorimetric Method for showing the Distribution and Quantity of Lead Arsenate upon sprayed and dusted surfaces.
By C. C. Hamilton.
10. Work on Insecticides with Reference to Spreaders.
By C. C. Hamilton.
11. Report of Southern Dahlia Trial Gardens.
By J. B. S. Norton and Thos. H. White.
12. Catalogue of 7,000 Dahlias in cultivation.
By J. B. S. Norton.
13. Dahlia Ratings.
By J. B. S. Norton.
14. Soil Survey of Somerset County.
By J. M. Snyder and J. Hall Barton.
15. Soil Survey of Wicomico County.
By J. M. Snyder and R. L. Gillett.
16. Soil Survey of Allegany County.
By O. C. Bruce and A. M. Smith.
17. Chemical changes during the growth and ripening of pea seeds.
By V. R. Boswell.
18. Proper storage of sweet potatoes as an aid to disease control.
By V. R. Boswell.
19. Seasonal changes in the chemical composition of the Concord grape vine.
By A. Lee Schrader.
20. The relation of chemical composition to the regeneration of roots and tops of tomato cuttings.
By A. Lee Schrader.
21. The Physiology and growth of the Concord grape vine.
By A. Lee Schrader.
22. What shall we substitute for the McCormick potato?
By T. H. White.
23. The importance of proper pollination in fruit yields.
By E. C. Auchter.
24. What determines the kind of soil management, fertilization and pruning that apple trees should receive.
By E. C. Auchter.
25. Effect of various lengths of day on development and chemical composition of some horticultural plants.
By E. C. Auchter and C. P. Harley.
26. Pollination and fruit growing.
By E. C. Auchter.

27. Orchard soil management, fertilizers and cover crops.
By E. C. Auchter.
28. The rejuvenation of peach orchards.
By E. C. Auchter.
29. Fruit tree transplanting studies.
By E. C. Auchter.
30. Maintaining production in the apple orchard.
By E. C. Auchter.
31. Peach pruning experiments.
By E. C. Auchter.

SOME RESULTS OF SPECIAL INTEREST TO MARYLAND FARMERS

The year covered by this report has been marked by great activity by the Staff and by the distribution of many bulletins giving useful information of importance to Maryland farmers.

It will not be possible to give a complete or detailed record of the Station's activities; but a brief concise statement concerning some of the outstanding results will probably prove worth while. More details and facts will be furnished upon application.

SOIL FERTILITY: Tests on Chestertown loam type of soil at Doughoregan Manor farm in Howard County covering a period of 8 years with a rotation of wheat, mixed hay, corn and soybeans has given an average return of \$3.02 for each ton of manure used. Five tons of manure applied to the corn and 250 lbs. of Dissolved (acid) phosphate applied to the wheat gave an average return of 3.96 per ton of manure used. One outstanding result of these test showed the advisability of using about one half as much manure as is usually applied and supplementing it with commercial fertilizer rather than to use greater quantities of either separately.

The Chestertown loam represents large areas of the best agricultural land in Howard, Carroll, Baltimore and Montgomery Counties. The tests at Doughoregan Manor has been discontinued because of change of ownership.

Tests at Frostburg in Allegany County has shown that most lands are deficient in phosphoric acid.

Tests on Leonardtown loam in St. Mary's Co. indicate that lime and manure or vegetable matter with proper drainage are the most important considerations to be given in increasing the productive capacity of that type of soil.

FIELD CROPS

WHEAT: Further tests and surveys confirm the conclusion that more attention should be given to *wheat types* than to varieties. Smooth wheats, such as Currell's, Leap's and Fultz are recom-

mended for the Piedmont Plateau region and the fulcaster type such as Mammoth Red, Bearded Purple straw, and Miracle for the Coastal plain and Lime stone valleys. These conclusions are based on a study of the behavior of these varieties over a period of from 20 to 34 years.

Wheat after corn is probably the most practical rotation on most farms and with proper culture and fertilization need not result in low yields. On farms where considerable manure is used on corn a fertilizer high in phosphoric acid potash has proven most efficient. On typical wheat soils a 2-12-4 fertilizer has produced the best yields.

Wheat after soybeans for hay has yielded better than wheat after corn on adjoining plots.

Spring top dressing of wheat at the rate of 100 lbs. per acre on acre plots at five different places on the Eastern Shore gave an average increase of 6 bushels per acre.

CORN: In the breeding and selection work with both field and sweet corn substantial progress has been made in increasing yields, vigor, uniformity in ripening, and the elimination of susceptibility to diseases.

SOYBEANS: In a test of about fifty varieties the past year for hay and seed, the Virginia and Wilson varieties continued in the lead as best adapted to Maryland condition.

In tests of the rate and method of planting for seed the results show that planting in rows 28 inches apart and giving some cultivation is preferable. Where conditions will not permit of cultivation then planting in rows 14 inches apart is advisable.

In a comparison of seeding soybeans with cowpeas, millet and sudan grass for hay the results were in favor of the sudan grass mixture as the yield was higher and the cost of seeding much less.

HAY PASTURE AND LAWN GRASS TESTS: These tests are conducted at College Park and two points in Allegany County, one west and one east of Cumberland. For pastures on the hilly land, orchard grass, Tall Meadow Oat grass, Red Fescue, and Sweet Vernal may be considered satisfactory, on the slopes and mountain valleys white clover and Lespedeza (Japan clover) may be added. At College Park, Kentucky Blue Grass and Orchard grass have proven best for pastures. For hay the tests show that a combination of alsike clover, alfalfa and timothy would be much more profitable for yield and quality than the growing of clover and timothy alone. The top dressing of Blue grass with 20 to 30 tons of ground lime stone will stimulate it sufficiently to crowd out crab grass.

INSECT CONTROL: The methods for the control of the Boxwood Leaf Miner as reported in Bulletin 272 have been successfully used by several commercial spraying concerns.

The use of calcium cyanide as a green house fumigant has proved satisfactory.

The Colorimetric method for showing the distribution and quantity of Lead Arsenate upon sprayed and dusted surfaces and the effect of various spreaders has marked an advance of much value in both experimental and practical work.

A study of the comparative effectiveness of chemically pure and commercial carbon bisulphide showed practically no difference in their value for fumigation.

PLANT DISEASES: The destruction of brown rot mummies of peaches and plums by plowing under seems to be a practical and effective mean of control and more easily followed than the lime applications previously advised.

A strain of Alaska peas resistant to root rot has been developed. About 200 pounds of this seed was produced last year.

PLANT PHYSIOLOGY: A study of the plant food requirements of potatoes when grown in sand with nutrient solutions showed the need for nitrogen, phosphorus and potassium in about the same proportions as is practiced on the sandy soils in the potato area of the Eastern Shore. This investigation also suggests a short method for determining the fertilizer requirements of other crops.

ORCHARD FRUITS: The pollination tests have clearly demonstrated that some varieties of fruit are self-sterile. The Stayman Wine Sap apple needs to be interplanted if fruit is to be obtained. Grimes is the best variety to use as a pollenizer for the Stayman. Mammoth Black Twig should be interplanted or top worked with Delicious or Jonathan. As a result of these tests many orchards have had a certain per cent of the trees top worked to provide for pollination. The value of bees as an aid for pollination has been demonstrated.

The results covering a period of four years show that for rejuvenating a peach tree moderately heavy pruning is preferable to either heavy or light pruning. Partial dehorning has not been satisfactory. The apple breeding work gives promise of three varieties of value to Maryland. Two of them are early red striped apples ripening ahead of Yellow Transparent and one a red apple ripening just ahead of Wealthy.

NEEDS OF THE STATION

New problems are constantly coming to the Experiment Station for solution. The attempt to meet this condition has caused the Staff to undertake more than facilities and resources justify. If future demands are to be met the Station must have more men, more land, more buildings, more equipment and more money.

For both educational and investigational work land and barns

are needed at College Park for all phases of Animal Husbandry. A small farm with sandy soil in the typical market garden area is needed for vegetable gardening experiments. Also a fruit farm in the fruit region could be used to advantage.

Present conditions make it necessary to practice extreme economy and give less time than desirable to many lines of research.

The results obtained in the past are paying a big dividend annually upon the amount expended for agricultural research. The future would seem to offer hopes of still greater rewards and justify larger expenditures.

Money invested in research is a business proposition which should be considered on its merits.

ACTIVE RESEARCH PROJECTS

1925-26

Agronomy (Farm Crops)

Leaders—J. E. Metzger, W. B. Kemp, G. Eppley, R. F. Hale and R. G. Rollgeb.

1. Studies of the pastures and pasture grasses for different sections of the State.
2. Correlation of meteorological factors with wheat yields.
3. Sugar corn seed production and breeding.
4. Experiments in forage, green manure, and winter cover crops. To determine the best use of rye, winter vetch, sweet clover, the common clovers, and alfalfa for forage, green manure, and winter clover crops purposes.
5. Methods of harvesting test plats. To study the accuracy of records secured by harvesting a portion of a plat in comparison with the yields secured from the entire plat.
6. Variety tests and selections of hardy strains of winter oats.
7. Wheat variety tests and improvements by selection and breeding.
8. Tests of varieties of cowpeas for seed and hay.
9. Corn production, selection, breeding and variety adaptation.
10. Soybean investigation. Adaptation of imported varieties, selection of superior types, tests of yields for hay and seed of varieties.
11. Place soybeans could occupy in the farm rotation.
12. Studies in crop rotations. To determine the most profitable point in the rotation to apply the usual fertility measures practiced by Maryland farmers.
13. Studies on environment in wheat.

Animal Husbandry:

Leaders—DeVoe Meade, B. E. Carmichael.

1. Survey of Sheep Industry and Correlation of Factors Influencing the raising of sheep.
2. Hogging off. vs. Pen feeding of corn.
3. Supplementary protein feeds for hogs.
4. Winter rations for breeding ewes.
5. Fattening early lambs for market.
6. Study of factors influencing the quality of ham and bacon.

Dairy Husbandry:

Leaders—DeVoe Meade, H. Bierman, S. H. Harvey, L. W. Ingham, R. C. Munkwitz.

1. Compilation of Results obtained through bull associations.
2. A study of factors influencing colors and flavors in milk.
3. A Study of factors influencing seasonal variations in Milk.
4. Growth studies in dairy animals.
5. Study of the relation of water supply to milk flow.
6. A comparison of the Baltimore and composite method of making milk tests.
7. Powdered milk as a feed for calves.
8. The use of gelatin in the manufacture of ice cream.

Poultry Husbandry:

Leaders—R. H. Waite, F. H. Leuschner.

1. Poultry Feeding.
2. Poultry Appliances.
3. A Study of Methods of Pullets selections for egg production.
4. Systems of culling flocks.
5. A survey and study of poultry and egg production under the various systems of management practiced in Maryland.

Biological Laboratory and Hog Cholera Investigations:

Leaders—E. M. Pickens, H. B. McDonnell, F. J. Poelma, W. R. Crawford.

1. Determining the percentage of double treated hogs that may later become susceptible to cholera; to find the proper age that pigs may be immunized by the double treatment; and length of time immunity of double treated pigs may be expected to last.

2. Determining the age at which pigs from immune others become susceptible to hog cholera.
3. A study of the relation of Ozone to animal diseases.
4. Survey of abortion in Dairy cattle.

Botany—Plant Propagation:

Leader—P. W. Zimmerman.

1. Plant propagation with special reference to cuttings of Woody Plants.

Canning Industry of Maryland:

This project is organized around the industry.

Coordinator and Correlator—F. W. Geise.

Collaborators—Departments of Agronomy, Agricultural Economics, Horticulture, Entomology, Plant Pathology, Plant Physiology and Soils.

Agricultural Economics Investigations:

Leaders—S. H. DeVault, E. L. Browne, Paul Walker.

1. Cost of Production, Manufacture and Distribution of Canned Vegetables.
2. Survey of the Road-side markets for farm products.
3. Special milk production surveys.

Horticultural Investigations

Pomology:

Leaders—E. C. Auchter, A. L. Schrader.

1. Fruit spur and biennial bearing studies of apples—Hancock, Maryland.
2. The effect of shade on horticultural plants. Fruits, vegetables and flowers used—College Park.
3. The effect of varying the length of day on plant growth and chemical composition—College Park.
4. The fertilization of apple orchards—Salisbury, Hancock, Colesville, Berlin and Mt. Airy.
5. The fertilization of peach orchards—Salisbury, Berlin, Mt. Airy and College Park.
6. Sod versus tillage for apple orchards—Hancock and Colesville.
7. The propagation of apple trees on their own roots—College Park.
8. The fertilization of strawberries—College Park, Ridgely, Salisbury and Marion.

9. The composition of bearing and non-bearing fruit spurs throughout the year—College Park.
10. The effect of bud and spur defoliation on fruit bud formation (peach)—College Park.
11. The influence of pollination on fruit yields—Hancock, College Park and Salisbury.
12. Experiments in grape training and pruning—College Park, Beltsville and Salisbury.
13. The rejuvenation of peach orchards—College Park and Smithsburg.
14. Peach pruning experiments—College Park, Salisbury and Mt. Airy.
15. The breeding of blight resistance pears—College Park.
16. The breeding of early colored grapes—College Park.
17. Variety tests of apples, peaches, pears, plums and cherries—College Park.
18. Variety tests of grapes and strawberries—College Park and Ridgely.
19. Variety tests of bush fruits—College Park.

Vegetable Gardening:

Leader—Thomas H. White

1. Potatoes:

- A. Improvement of McCormick.
- B. Variety experiments with especial relation to a good late variety.
- C. Time of planting late potatoes—Belair, Marion and College Park.

2. Cabbage and Cauliflower:

Leaders—Thomas H. White and V. R. Boswell.

- A. Methods of growing seed of especially adapted varieties.
- B. Conditions affecting heading of late crop of cauliflower in southern sections of State—Ridgely and College Park.
- C. Study of hardiness in Early Jersey Wakefield and Charleston Wakefield, and possible bearing it may have on formation of seed shoots—College Park.
- D. Selection of mid-season "yellows" resistant strains best suited to Maryland—College Park.

3. Garden Peas:

Leaders—F. W. Geise and V. R. Boswell

- A. Fertilizers.
- B. Rate of seeding.

- C. Best crop to precede.
- D. Rotation of crops with and without legumes as affecting diseases.
- E. Inoculation Experiments
- F. Influence of temperature on the growth of pea—Ridgely and College Park.
- G. Factors influencing yield and quality of Canning peas.

4. Rhubarb:

Leader—Thomas H. White.

- A. Chemical fertilizers with especial reference to Sulphate of Ammonia—College Park and Chillum.

5. Cantaloupes:

Leader—Thomas H. White.

- A. Breeding and selection.
- B. Manures vs. fertilizers.
- C. Pollination influence.

6. Sweet Potatoes:

Leader—F. W. Geise.

- A. Fertilizers—best nitrogen and potash carriers.
- B. Lime influence—Salisbury and Cheltenham.

7. General Fertility Problems:

Leader—Thomas H. White.

- A. Amounts of manures and fertilizers to keep soil fertile for vegetable production.
- B. Effect of continued applications of potash salts.
- C. Effects of rye as a winter cover for early spring plowing and same for later work.

8. Testing new varieties and strains of vegetables.

9. A study of Maryland vegetables as to varieties, cultural methods and marketing.

10. Asparagus:

- A. Effects of Potash on Yield and Quality.
- B. Comparison of spring and summer application of commercial fertilizers.

11. Spinach:

- A. The Development of blight resistant strain.
- B. Suitable for market and canning.

12. Tomatoes:

- A. Breeding, selection of varieties for canning.
- B. Cultural methods.

Floriculture:

Leader—Thomas H. White.

1. Roses:
 - A. Effect of heavy and light pruning on growth and yield.
2. Carnations:
 - A. A study of calyx splitting.
 - B. Effect of soil types on yields of varieties.
3. Snapdragon:
 - A. Breeding and selection.
4. Gladiolus:
 - A. Effect of time of ripening of bulb on forcing qualities.
5. Treatment of greenhouse soil in solid beds:
 - A. Drainage.
 - B. Freezing.
 - C. Drying.
6. Relation of length of day to blooming of violets.

Tobacco Investigations:

Leaders—W. W. Garner, D. E. Brown.

1. Maryland export tobacco investigations.
 - A. Improvement by breeding and selection, tests of fertilizers, studies of systems of crops rotation, methods of growing, curing and handling, and control of important diseases.
2. Plant nutrition investigations.
 - A. Crop rotations, comparative effect of tobacco and other crop yields of succeeding crops.
 - B. Tobacco seed production.

Plant Pathology (Disease) Investigations:

Leaders—J. B. S. Norton, R. A. Jehle, C. E. Temple, A. J. Moyer.

1. Tomato Blight.
2. Tomato Root Knot Control.
3. Relation of Sulphur to cell structure.
4. Fruit-rotting Sclerotinias.
5. Maryland Grasses.
6. Corn and Pea root rots.
7. Seed bed control of tobacco diseases.
8. Apple scab.
9. Spray injuries on fruit.
10. Disease resistance in seeds and plants.
11. Study of Potato certification methods and Potato Mosaic.

12. Cabbage Yellows.
13. Clover mildew and Anthracnose.
14. Disease and fungi which carry over winter in wheat.
15. Comparison of Copper Carbonate dust and formaldehyde for forcing seed wheat of bunt.
16. Peach twig canker.

Plant Physiology Investigations :

Leaders—C. O. Appleman, E. S. Johnston, C. M. Conrad, C. L. Smith

1. The physiological and biochemical aspects of potato storage and transportation.
2. Some physiological aspects of fruit storage.
3. Metabolism studies with sweet corn.
4. Factors Influencing the Hardness of the Peach.
5. Mineral nutrient requirements of the potato plant.
6. The Relation of Light, Temperature and Atmospheric Moisture to the Physiological Salt Balance in Nutrient Solutions for Plants.

Entomology (Insect Investigations) :

Leaders—E. N. Cory, H. S. McConnell, H. H. Shepherd, Paul Knight

1. The Boxwood Leaf Miner.
2. The Biology and Control of Deperons leaf Miners. The Chrysanthemum Gall Midge.
3. The biology and control of some greenhouse pests.
4. Winter protection of bees.
5. The properties of pine tar creosote as an insecticide.
6. A study of the efficiency of spreaders and stickers.
7. The comparison of the Effectiveness of chemically pure and commercial carbon bi-sulphide.
8. The Effect of oil emulsion on scale insects and aphid eggs.
9. Further studies on the control of the Oriental peach moth.
10. Methods for the control of the Potato Tuber Moth.

Seed Laboratory :

Leaders—F. S. Holmes, A. M. Ferguson, E. Emack, O. M. Kelk,
R. M. Mostyn, K. Smith.

1. Analyses and germination tests of collected (official) samples.
2. Analyses and germination tests of collected (unofficial) samples.
3. Studies of seed control methods and the relation of foreign matter to the source.

Soil and Fertility Investigations:

Leaders—A. G. McCall, R. R. McKibben, J. M. Snyder, H. B. Winant.

1. An investigation of the factors affecting the availability of the potassium compounds of the soil.
2. A study of the hourly and daily fluctuations in the temperature of the soil. Records at different depths under bare and cropped surfaces.
3. Soil management and fertilizer investigations. The upbuilding of fertility of the more important soil types.
4. Pot culture studies of the fertilizer requirement of different soil types.
5. Lime requirements of an acid soil.
Comparison of the value of different form of lime.
6. Calcium vs. magnesium limestone.
7. Phosphate experiments.
Comparison of the availability of the phosphorus in raw ground phosphate rock with acid phosphate, when used with green manures.
8. Green manuring experiments.
Including cowpeas, soybeans and buckwheat.
Including crimson clover, hairy vetch, rye, red clover and alsike clover.

Ridgely Sub-Station:

1. Growing multiplication plats of mammoth red wheat for distribution.
2. The use of fertilizers in the rotation of corn, wheat, hay and tomatoes.
3. Tests with late potatoes—varieties, size of seed and fertility.
4. Variety and fertilizer tests of strawberries.
5. Experiments with sweet potatoes, eggplants, peppers and cantaloupes.
6. Experiments with garden peas for canning and market.
7. Tests of varieties of tomatoes and early plants on total yield.
8. The effect of lime with and without fertilizers and manure.
9. Tests of different kinds of lime on alfalfa.
10. Variety tests of corn, wheat and soy beans.
11. Tests of new selections of wheat.

FINANCIAL STATEMENT

MARYLAND AGRICULTURAL EXPERIMENT STATION IN ACCOUNT WITH UNITED STATES APPROPRIATIONS.

Dr.	Hatch Fund	Adams Fund
To appropriations for fiscal year 1924-25	\$15,000.00	\$15,000.00
Cr.		
By Salaries	\$14,867.74	\$13,887.62
Labor	125.00	214.00
Stationery and Office Supplies		36.90
Sundry Supplies		28.38
Scientific Supplies		487.37
Communication Service	7.26	17.44
Travel Expenses		13.05
Transportation of Things		2.20
Furniture and Fixtures		24.70
Library		1.00
Scientific Equipment		252.71
Tools, Machinery and Equipment		28.00
Repairs on Buildings		6.63
	<u>\$15,000.00</u>	<u>\$15,000.00</u>

MARYLAND AGRICULTURAL EXPERIMENT STATION IN ACCOUNT WITH THE STATE APPROPRIATIONS.

Dr.	General Fund	Ridgely Farm
Balance July 1, 1924		11.88
Receipts for the year 1924-1925	\$62,452.94	\$ 5,035.76
	<u>\$62,452.94</u>	<u>\$ 5,047.64</u>
Cr.		
By Salaries	\$26,257.62	\$ 1,800.00
Labor	15,022.21	2,392.69
Stationery and Printing	449.73	1.14
Scientific Supplies	483.67	80.56
Feeding Stuffs	6,092.38	
Sundry Supplies	1,194.78	104.52
Fertilizers	177.35	
Communication	247.47	23.12
Travel	980.56	91.87
Transportation of Things	1,603.01	21.15
Publications	2,690.48	
Heat, Light and Power	2,033.21	12.33
Furniture and Fixtures	69.15	
Library	272.70	
Scientific Equipment	1,018.41	
Tools, Machinery and Equipment	2,231.77	169.57
Building Repairs	4,393.99	81.89
Contingent Expenses	101.89	
	<u>\$65,320.38</u>	<u>\$ 4,778.84</u>
Overdraft July 1, 1924	3,778.24*	
	<u>\$69,098.62</u>	
Overdraft June 30, 1925	6,645.68*	
Credit Balance June 30, 1925		268.80
	<u>\$62,452.94</u>	<u>\$ 5,047.64</u>

*Due from State Treasurer.

MARYLAND AGRICULTURAL EXPERIMENT STATION IN ACCOUNT
WITH REGULATORY AND PUBLIC SERVICE FUNDS.

Dr.	Biological Laboratory	Seed Inspection
To Balance July 1, 1924	\$ 2,283.28	
Receipts from State Appropriation	5,612.88	\$ 7,763.80
Receipts from Sales of Serum	5,341.99	
	<u>\$13,238.15</u>	<u>\$ 7,763.80</u>
Cr.		
By Salaries	5,920.86	\$ 2,580.00
Labor	1,377.75	4,483.21
Stationery and Printing	53.77	212.65
Scientific Supplies	3,214.21	76.04
Feeding Stuffs	95.75	
Sundry Supplies	309.80	5.65
Communication	530.70	76.48
Travel	39.01	450.74
Transportation of Things	101.14	
Publications	15.00	
Heat, Light, Water and Power	946.02	
Furniture and Fixtures	43.43	79.54
Scientific Equipment	128.00	
Tools, Machinery and Appliances	212.81	
Library		20.84
Building Repairs	4.96	
Contingent Expenses	204.14	5.00
Overdraft July 1, 1924		558.12*
	<u>\$13,197.35</u>	<u>\$ 8,548.27</u>
Credit Balance June 30, 1925	40.80	
Overdraft June 30, 1925		784.47*
	<u>\$12,238.15</u>	<u>\$ 7,763.80</u>

*Due from State Treasurer.

MARYLAND AGRICULTURAL EXPERIMENT STATION,
STATION FARM ACCOUNT

Dr.		
Balance July 1, 1924		\$ 460.51
Receipts from Sales, 1924-1925		17,610.56
Cr.		<u>\$18,071.07</u>
By Salaries		\$ 8,824.94
Labor		6,247.17
Scientific Supplies		88.68
Feeding Stuffs		1,062.10
Sundry Supplies		677.65
Fertilizers		73.69
Communication		22.20
Travel		420.04
Transportation of Things		32.15
Publications		939.21
Heat, Light and Power		219.60
Library		4.64
Tools, Machinery and Appliances		397.29
Building Repairs		1,099.83
Contingent Expenses		62.20
Payment of Note		2,500.00
		<u>\$17,671.39</u>
Balance June 30, 1925		399.68
		<u>\$18,071.07</u>

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